

Patent Claims

1. A device for suspending articles or for securing a bearing means, with:

- a) a plug-in sleeve (1), the latter:
 - 5 aa) having a front plug-in opening (11) which continues axially as a free space into the interior of the plug-in sleeve (1);
 - ab) having an arresting contour (17) on its inside; and
 - ac) being intended for fastening directly or indirectly on a carrying structure (4,5,6);
- 10 b) a load carrier (2,2'), the latter:
 - ba) having a plug-in part (25) intended for introducing into the front plug-in opening (11);
 - bb) the plug-in part (25) having a mating contour (26), which is provided for engaging with the arresting contour (17) on the plug-in sleeve (1); and
 - 15 bc) serving for suspending articles directly or for supporting a bearing means;
 - c) the configuration of plug-in part (25) and plug-in sleeve (1) forcing the introduction of the plug-in part (25) into the plug-in sleeve (1) with the load carrier (2,2') inclined in relation to the horizontal overall, the plug-in part (25) being in a lowered position; and
 - 20 d) the engagement between the arresting contour (17) and the mating contour (26), as the locked state, being achieved once the load carrier (2,2') moves as a whole into the horizontal with the plug-in part (25) located horizontally, characterized in that
 - e) the arresting contour (17) is formed on the underside of the ceiling (13) and/or on the side flanks of the housing (12) of the plug-in sleeve (1);
 - 25 f) the mating contour (26) is provided on the top side of the plug-in part (25) and/or on the side flanks thereof; and
 - g) the arresting contour (17) is designed as an elevation and the mating contour (26) is designed as a recess.

2. The device as claimed in claim 1, characterized in that

- a) the arresting contour (17) is arranged on both sides of the ceiling (13) of the housing (12) of the plug-in sleeve (1), at the transition to the side flanks of the latter; and
- 5 b) the mating contour (26) is located in the two side flanks of the plug-in part (25).

3. The device as claimed in at least one of claims 1 and 2, characterized in that

- 10 a) the arresting contour (17) on both sides extends essentially from the ceiling (13) and is directly adjacent to the side flanks of the housing (12) of the plug-in sleeve (1); and
- b) the mating contour (26) is provided in the two side flanks of the plug-in part (25) in each case as a recess which passes vertically all the way through and is set back in relation to the end (27), as a result of which an outer claw (28)
- 15 is produced in each case in the front corner regions of the plug-in part (25).

4. The device as claimed in at least one of claims 1 to 3, characterized in that the arresting contour (17) on both sides

- 20 a) begins, in the direction of the front plug-in opening (11), with an inlet (19) located on the same plane as the ceiling (13);
- b) slopes up in a wedge-shaped manner in the opposite direction;
- c) terminates, toward the rear part of the housing (12) of the plug-in sleeve (1), with a buffer edge (18); and
- 25 d) in the locked state, the two outer claws (28) grip behind the associated buffer edge (18) in each case.

5. The device as claimed in at least one of claims 1 to 4, characterized in that

- 30 a) the plug-in opening (11) is of rectangular cross section and has a frame (10) positioned around it in a flange-like manner;

- b) the plug-in part (25), at least to the extent where it is guided through the front plug-in opening (11), likewise has a rectangular cross section and is preferably made of metal;
- c) at least one stop surface (162), which limits the maximum push-in depth of the plug-in part (25), is provided inside the housing (12) of the plug-in sleeve (1), in the rear region, which is located opposite to the front plug-in opening (11);
- d) inside the housing (12) of the plug-in sleeve (1) is at least one screw seat (161) with a through-opening (160) for the introduction of a fastening screw (39) for fixing the plug-in sleeve (1); and
- e) the plug-in sleeve (1) is preferably a single-piece metal casting or plastic injection molding.

6. The device as claimed in at least one of claims 1 to 5, characterized in that

- a) at the rear end, which is located opposite the frame (10), the plug-in sleeve (1) has a rear plug-in opening (11') and retaining contours (166) for the insertion of a first electrical coupling part (7) with a cable (K) routed up into place; and
- b) the plug-in part (25) has an aperture (250) and retaining contours (256) for the insertion of a second electrical coupling part (8), with a continuing cable (K) for supplying power to a consuming unit, the two coupling parts (7,8), with the plug-in part (25) pushed into the plug-in sleeve (1) to the maximum extent, being intended for engaging mechanically and electrically with one another.

7. The device as claimed in at least one of claims 1 to 6, characterized in that

- a) a sleeve holder (3) is provided for accommodating the housing (12) of the plug-in sleeve (1), this sleeve holder being intended for fastening on the carrying structure (4,5,6) of the plug-in sleeve and having:
- b) a housing (30), which is divided up into a front portion (300) and a rear portion (301);

- c) a front plug-in opening (32), which is accessible from the front portion (300), and a rear plug-in opening (32'), which is accessible from the rear portion (301);
- d) flange-like extensions (31), which grip the housing (30) at the transition between the front portion (300) and rear portion (301); and
- e) at least one crosspiece (33), which is provided at the free end of the rear portion (301) and has a screw hole (34) for the engagement of the threaded shank (391) of the at least one fastening screw (39), which fixes the plug-in sleeve (1) and has its head (390) positioned in the screw seat (161).

8. The device as claimed in at least one of claims 1 to 7, characterized in that

- a) the plug-in sleeve (1) is intended for plugging through a through-passage (42) in the panel element (4);
- b) the frame (10) of the plug-in sleeve (1), this frame enclosing the front plug-in opening (11), is positioned on the front side (40) of the panel element (4);
- c) the inserted plug-in sleeve (1) is fixed by a sleeve holder (3), which accommodates the rear part of the plug-in sleeve (1); and
- d) the extensions (31) of the sleeve holder (3) are provided with the screw holes (310,311) therein for screwing on the rear side (41) of the panel element (4) or on a carrying structure (5) erected behind the panel element (4); in which case
- e) the front portion (300) of the sleeve holder (3) can project into the through-passage (42) in the panel element (4).

9. The device as claimed in at least one of claims 1 to 7, characterized in that

- a) the extensions (31) of the sleeve holder (3), with the screw holes (310,311) therein, can be utilized for screwing on an outer surface (61) which is directed into space and belongs to a vertical support (6) in the form of a hollow polygonal profile, this vertical support serving as a carrying structure (6);

- b) the rear portion (301) of the sleeve holder (3) projects into the cavity of the vertical support (6);
- c) the front portion (300) of the sleeve holder (3) projects into the through-passage (42) in the panel element (4); and
- 5 d) the frame (10) of the plug-in sleeve (1), this frame enclosing the front plug-in opening (11), is positioned on the front side (40) of the panel element (4).

10. The device as claimed in at least one of claims 1 to 9, characterized in that the rod part (20) of the carrying arm (2)

- 10 a) is a round or quadrilateral tube which is rectilinear or curved or is angled one or more times; or
- b) is a round or quadrilateral bar which is rectilinear or curved or is angled one or more times; or
- c) bears a shelf (2') which is supported by at least one retaining element, e.g. a transverse strut, at the front end (21) and/or at the plug-in end (22); or
- 15 d) merges into a transverse rod at the front end (21) and may additionally be provided with a shelf (2').